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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. AT9-99-159

Date: April 27, 1999

Assistant Commissioner for Patents
Washington, D.C. 20231

jc525 U.S. PTO
09/300320
04/27/99

Sir:

Transmitted herewith for filing is the patent application of Inventor(s):

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&
ALAN R. TANNENBAUM

For: **A METHOD AND APPARATUS FOR SENDING MESSAGES IN A DATA PROCESSING SYSTEM**

Enclosed are also:

- ☒ 25 Pages of Specification including an Abstract
- ☒ 8 Pages of Claims
- ☒ 2 Sheet(s) of Drawings (*informal*)
- ☒ A Declaration and Power of Attorney
- ☒ Form PTO 1595 and assignment of the invention to IBM Corporation

CLAIMS AS FILED

FOR	Number Filed		Number Extra		Rate		Basic Fee (\$760)
Total Claims	31	-20 =	11	X	\$ 18	=	\$198
Independent Claims	9	-3 =	6	X	\$ 78	=	\$468
Multiple Dependent Claims	0			X	\$260	=	\$0
Total Filing Fee							= \$1,426

- ☒ Please charge \$1,426.00 to IBM Corporation, Deposit Account No. 09-0447.
- ☒ The Commissioner is hereby authorized to charge payment of the following fees associated with the communication or credit any over payment to IBM Corporation, Deposit Account No. 09-0447. A duplicate copy of this sheet is enclosed.
- ☒ Any additional filing fees required under 37CFR § 1.16.
- ☒ Any patent application processing fees under 37CFR § 1.17.

Respectfully,

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**A METHOD AND APPARATUS FOR SENDING MESSAGES IN A DATA
PROCESSING SYSTEM**

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CROSS REFERENCE TO RELATED APPLICATIONS

The present invention is related to applications
entitled METHOD AND APPARATUS FOR DISPLAYING CONTROLS IN A
GRAPHICAL USER INTERFACE, serial no. _____, attorney
10 docket no. AT9-99-136; A METHOD AND APPARATUS FOR SENDING
MESSAGES IN A DATA PROCESSING SYSTEM, serial no.
_____, attorney docket no. AT9-99-158; METHOD AND
APPARATUS FOR AUTO-EXPANDING AND MANIPULATING DATA FIELDS
IN A DATA PROCESSING SYSTEM, serial no. _____,
15 attorney docket no. AT9-99-160; A METHOD AND APPARATUS FOR
INTEGRATING ADDRESS BOOKS WITH MOST RECENTLY USED ADDRESS
ASSISTANCE, serial no. _____, attorney docket no.
AT9-99-161; METHOD AND APPARATUS FOR FILTERING MESSAGES IN
A DATA PROCESSING SYSTEM, serial no. _____, attorney
20 docket no. AT9-99-162; and METHOD AND APPARATUS TO
ANNOUNCE RECEIPT OF AN ELECTRONIC MESSAGE, serial no.
_____, attorney docket no. AT9-99-163; all of which
are filed even date hereof, assigned to the same assignee,
and incorporated herein by reference.

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BACKGROUND OF THE INVENTION

1. Technical Field:

The present invention relates to an improved data
30 processing system and in particular to a method and
apparatus for sending messages in a data processing
system. Still more particularly, the present invention

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provides a method and apparatus for a custom voice messaging system using legacy mail systems.

2. Description of Related Art:

5 The Internet, also referred to as an "internetwork", is a set of computer networks, possibly dissimilar, joined together by means of gateways that handle data transfer and the conversion of messages from the sending network to the protocols used by the receiving network (with packets
10 if necessary). When capitalized, the term "Internet" refers to the collection of networks and gateways that use the TCP/IP suite of protocols.

 The Internet has become a cultural fixture as a source of information, entertainment, and communications.
15 Many businesses are creating Internet sites as an integral part of their marketing efforts, informing consumers of the products or services offered by the business or providing other information seeking to engender brand loyalty. Many federal, state, and local government
20 agencies are also employing Internet sites for informational purposes, particularly agencies which must interact with virtually all segments of society such as the Internal Revenue Service and secretaries of state. Providing informational guides and/or searchable databases
25 of online public records may reduce operating costs. Further, the Internet is becoming increasingly popular as a medium for commercial transactions.

 In addition to being a source of information, the Internet also provides a communications medium. The
30 Internet has become the most popular computer network used by consumers and businesses to send and receive

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electronic mail, also referred to as "e-mail". The Internet allows users to readily send and receive e-mail to and from computers around the world. Each user typically has a unique Internet e-mail address (e.g.,
5 steve@ibm.com). A user with an e-mail account and a computer capable of connecting to the Internet can easily send and receive e-mail over the network.

E-mail allows a person to quickly and easily send textual messages and other information, such as, for
10 example, pictures, sound recordings, and formatted documents electronically to other e-mail users anywhere in the world. An e-mail user will typically create a message using an e-mail program running on a computer connected to a computer network through a modem. The
15 message will include an e-mail "address" for the intended recipient. When the user has finished entering the message, the user may "send" the message to the intended recipient. The e-mail program then electronically transmits the message over the computer network. The
20 recipient, using an e-mail program running on the recipient's computer, can then "receive" the message.

In current electronic mail systems, primary support is provided for content in the form of text with additional support being present for imbedding other
25 types of content, such as audio or voice. Currently, if a user creates a voice message to be sent through e-mail, neither the process of creating the e-mail nor receiving the e-mail is optimized for the particular type of content being sent or received. Currently available
30 e-mail systems treat all e-mail as a single type of document, which may or may not have attachments

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containing other types of content. Using currently available e-mail systems, the viewing of other types of content requires additional steps, increasing the complexity involved in viewing non-text content.

- 5 Thus, it would be advantageous to have an improved method and apparatus for sending messages through an e-mail system.

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SUMMARY OF THE INVENTION

The present invention provides a method and
5 apparatus in a computer for processing voice messages. A
voice message is recorded. Responsive to recording of
the voice message, an identifying string is automatically
inserted into a text message identifying a presence of a
voice message. Responsive to recording the voice
10 message, the voice message is automatically appended to a
text message to form an appended voice message. The text
message is sent with the appended voice message. When a
message is received, the text in the received message is
parsed to see if an identifying string is present
15 indicating that the received message is a voice message.
Responsive to a determination that the received message
is a voice message, a graphical user interface including
controls for presenting the voice message is displayed.

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BRIEF DESCRIPTION OF THE DRAWINGS

The novel features believed characteristic of the invention are set forth in the appended claims. The invention itself, however, as well as a preferred mode of use, further objectives and advantages thereof, will best be understood by reference to the following detailed description of an illustrative embodiment when read in conjunction with the accompanying drawings, wherein:

Figure 1 depicts a pictorial representation of a distributed data processing system in which the present invention may be implemented;

Figure 2 is a block diagram of a data processing system that may be implemented as a server depicted in accordance with a preferred embodiment of the present invention;

Figure 3 is a block diagram illustrating a data processing system in which the present invention may be implemented;

Figure 4 is a block diagram of a custom messaging system depicted in accordance with a preferred embodiment of the present invention;

Figures 5A, 5B, and 6-8 are diagrams of graphical user interfaces used in sending and receiving customized e-mail messages depicted in accordance with a preferred embodiment of the present invention;

Figure 9 is a flowchart of a process for creating and sending custom voice messages depicted in accordance with a preferred embodiment of the present invention;

Figure 10 is a flowchart of a process for receiving

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custom voice messages depicted in accordance with a preferred embodiment of the present invention; and

Figure 11 is a flowchart of a process for displaying custom voice messages to a user depicted in accordance
5 with a preferred embodiment of the present invention.

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DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

With reference now to the figures, **Figure 1** depicts a
5 pictorial representation of a distributed data processing
system in which the present invention may be implemented.
Distributed data processing system **100** is a network of
computers in which the present invention may be
implemented. Distributed data processing system **100**
10 contains a network **102**, which is the medium used to
provide communications links between various devices and
computers connected together within distributed data
processing system **100**. Network **102** may include permanent
connections, such as wire or fiber optic cables, or
15 temporary connections made through telephone connections.

In the depicted example, a server **104** is connected to
network **102** along with storage unit **106**. In addition,
clients **108**, **110**, and **112** also are connected to a network
102. These clients **108**, **110**, and **112** may be, for example,
20 personal computers or network computers. For purposes of
this application, a network computer is any computer,
coupled to a network, which receives a program or other
application from another computer coupled to the network.
In the depicted example, server **104** provides data, such as
25 boot files, operating system images, and applications to
clients **108-112**. Clients **108**, **110**, and **112** are clients to
server **104**. In the depicted examples, server **104** may
contain an electronic mail system from which clients **108**,
110, and **112** send and receive e-mail messages.

30 Distributed data processing system **100** may include
additional servers, clients, and other devices not shown.

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For example, messages may be sent and received between server **104** and other servers (not shown) to distribute and receive messages from other clients (not shown).

In the depicted example, distributed data processing
5 system **100** is the Internet with network **102** representing a worldwide collection of networks and gateways that use the TCP/IP suite of protocols to communicate with one another. At the heart of the Internet is a backbone of high-speed data communication lines between major nodes or host
10 computers, consisting of thousands of commercial, government, educational and other computer systems that route data and messages. Of course, distributed data processing system **100** also may be implemented as a number of different types of networks, such as for example, an
15 intranet, a local area network (LAN), or a wide area network (WAN). **Figure 1** is intended as an example, and not as an architectural limitation for the present invention.

Referring to **Figure 2**, a block diagram depicts a data processing system that may be implemented as a server,
20 such as server **104** in **Figure 1**, in accordance with a preferred embodiment of the present invention. In the depicted examples, data processing system **200** is used as a electronic mail message server providing service to a number of clients. Data processing system **200** may be a
25 symmetric multiprocessor (SMP) system including a plurality of processors **202** and **204** connected to system bus **206**. Alternatively, a single processor system may be employed. Also connected to system bus **206** is memory controller/cache **208**, which provides an interface to local
30 memory **209**. I/O bus bridge **210** is connected to system bus

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206 and provides an interface to I/O bus **212**. Memory controller/cache **208** and I/O bus bridge **210** may be integrated as depicted.

Peripheral component interconnect (PCI) bus bridge **214** connected to I/O bus **212** provides an interface to PCI local bus **216**. A number of modems may be connected to PCI bus **216**. Typical PCI bus implementations will support four PCI expansion slots or add-in connectors. Communications links to network computers **108-112** in **Figure 1** may be provided through modem **218** and network adapter **220** connected to PCI local bus **216** through add-in boards.

Additional PCI bus bridges **222** and **224** provide interfaces for additional PCI buses **226** and **228**, from which additional modems or network adapters may be supported. In this manner, server **200** allows connections to multiple network computers. A memory-mapped graphics adapter **230** and hard disk **232** may also be connected to I/O bus **212** as depicted, either directly or indirectly.

Those of ordinary skill in the art will appreciate that the hardware depicted in **Figure 2** may vary. For example, other peripheral devices, such as optical disk drives and the like, also may be used in addition to or in place of the hardware depicted. The depicted example is not meant to imply architectural limitations with respect to the present invention.

The data processing system depicted in **Figure 2** may be, for example, an IBM RISC/System 6000 system, a product of International Business Machines Corporation in Armonk, New York, running the Advanced Interactive Executive (AIX)

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operating system.

With reference now to **Figure 3**, a block diagram illustrates a data processing system in which the present invention may be implemented. Data processing system **300** is an example of a client computer. Data processing system **300** employs a peripheral component interconnect (PCI) local bus architecture. Although the depicted example employs a PCI bus, other bus architectures such as Micro Channel and ISA may be used. Processor **302** and main memory **304** are connected to PCI local bus **306** through PCI bridge **308**. PCI bridge **308** also may include an integrated memory controller and cache memory for processor **302**. Additional connections to PCI local bus **306** may be made through direct component interconnection or through add-in boards. In the depicted example, local area network (LAN) adapter **310**, SCSI host bus adapter **312**, and expansion bus interface **314** are connected to PCI local bus **306** by direct component connection. In contrast, audio adapter **316**, graphics adapter **318**, and audio/video adapter **319** are connected to PCI local bus **306** by add-in boards inserted into expansion slots. Expansion bus interface **314** provides a connection for a keyboard and mouse adapter **320**, modem **322**, and additional memory **324**. SCSI host bus adapter **312** provides a connection for hard disk drive **326**, tape drive **328**, and CD-ROM drive **330**. Typical PCI local bus implementations will support three or four PCI expansion slots or add-in connectors.

An operating system runs on processor **302** and is used to coordinate and provide control of various components within data processing system **300** in **Figure 3**. The

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operating system may be a commercially available operating system such as OS/2, which is available from International Business Machines Corporation. "OS/2" is a trademark of International Business Machines Corporation. An object
5 oriented programming system such as Java may run in conjunction with the operating system and provides calls to the operating system from Java programs or applications executing on data processing system **300**. "Java" is a trademark of Sun Microsystems, Inc. Instructions for the
10 operating system, the object-oriented operating system, and applications or programs are located on storage devices, such as hard disk drive **326**, and may be loaded into main memory **304** for execution by processor **302**.

Those of ordinary skill in the art will appreciate
15 that the hardware in **Figure 3** may vary depending on the implementation. Other internal hardware or peripheral devices, such as flash ROM (or equivalent nonvolatile memory) or optical disk drives and the like, may be used in addition to or in place of the hardware depicted in
20 **Figure 3**. Also, the processes of the present invention may be applied to a multiprocessor data processing system.

For example, data processing system **300**, if optionally configured as a network computer, may not
25 include SCSI host bus adapter **312**, hard disk drive **326**, tape drive **328**, and CD-ROM **330**, as noted by dotted line **332** in **Figure 3** denoting optional inclusion. In that case, the computer, to be properly called a client computer, must include some type of network communication
30 interface, such as LAN adapter **310**, modem **322**, or the like. As another example, data processing system **300** may

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be a stand-alone system configured to be bootable without relying on some type of network communication interface, whether or not data processing system **300** comprises some type of network communication interface. As a further
5 example, data processing system **300** may be a Personal Digital Assistant (PDA) device which is configured with ROM and/or flash ROM in order to provide non-volatile memory for storing operating system files and/or user-generated data.

10 The depicted example in **Figure 3** and above-described examples are not meant to imply architectural limitations.

The present invention provides a method, apparatus, and instructions for an improved e-mail system that is
15 customizable for the particular type of content. Specifically, the mechanism of the present invention improves the user experience and effectiveness of sending messages containing different types of content through an e-mail system. The type of mail is identified and
20 alternate optimized views for mail of that type is provided to both create, send, and receive the mail.

With reference now to **Figure 4**, a block diagram of a custom messaging system is depicted in accordance with a preferred embodiment of the present invention. In this
25 example, a graphical user interface (GUI) **400** is used in combination with a message processing unit **402** to send customized content. The customized content is sent through mail system **404** to mail system **406** for receipt by message processing unit **408**, which provides a customized
30 display in GUI **410** to the user based on the type of content. In this example, GUI **400**, message processing

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unit **402**, and mail system **404** may be located at one client while GUI **410**, message processing unit **408**, and mail system **406** are located at another client in a distributed data processing system. In these examples, 5 mail system **404** and mail system **406** are legacy mail systems while GUI **400**, message processing unit **402**, GUI **410**, and message processing unit **408** implement processes of the present invention. These clients may be implemented using a data processing system, such as data 10 processing system **300** in **Figure 3**. GUI **400** and GUI **410** provide customizable interfaces to the user based on the type of content being sent and received by the user. Message processing unit **402** and message processing unit **408** process messages created and received by the user 15 through presently available or legacy mail system processes found in mail system **404** and mail system **406**. The legacy mail systems may be implemented using currently available mail systems, such as Lotus Notes or CC Mail, which are available from Lotus Development 20 Corporation. Address lists associated with these mail systems may be accessed by the processes of the present invention in message processing unit **302** or **308** using known interfaces supported by the mail system. For example, Vendor Independent Messaging (VIM) is an example 25 of a known interface support by many mail systems that may be used to access address books as well as initiate various functions, including, for example the sending of mail messages and attaching files to mail messages.

The actual storage and transmission of e-mail, 30 including customized content, is implemented using conventional e-mail data formats and protocols. The

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separation of these functions are shown for purposes of clearly illustrating the present invention. Of course, depending on the implementation, the processes of the present invention may be implemented directly within a mail system.

A user may initiate the sending of a voice message through GUI **400**. A standard text string is placed within a text message by message processing unit **402** in response to initiation of a voice message by the user. This text string is used to identify the e-mail message as a voice message. An example text string may be as follows: "voice message created by Netmate". The user then records a voice message through GUI **400** and message processing unit **402**. This voice message is stored as a file **412**. When the user has completed recording the voice message and selected a recipient address, an email message **414** is created and file **412** is appended or attached to the e-mail message **414**. E-mail message **414** is then sent by mail system **404** to mail system **406**. The transfer of e-mail message **414** along with the attached voice message in file **412** is facilitated by one or more mail servers.

When e-mail message **414** is received by mail system **406**, message processing unit **408** parses email message **414** for selected text strings that identify the type of content. If the string "voice message created by Netmate" is present within e-mail message **414** and an audio attachment is present, e-mail message **414** will be identified as a customized type, such as a voice message. Message processing unit **408** would then render the mail

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document in GUI **410** with appropriate optimized views for voice messages. If e-mail message **414** is received by a legacy mail system that is unable to identify customized messages, the message will still be received along with
5 the attached file and the user may still view the message and the attached file through presently available e-mail interfaces. Through the use of the text string, the processes of the present invention allow for customized presentation by e-mail systems enabled to handle
10 customized creation and viewing of e-mail messages while legacy e-mail systems are able to receive these e-mail messages without errors.

With reference now to **Figures 5A, 5B, and 6-8**, diagrams of graphical user interfaces used in sending and
15 receiving customized e-mail messages are depicted in accordance with a preferred embodiment of the present invention. In **Figure 5A**, GUI **500** is an example of a graphical user interface, which allows a user to specify different types of e-mail messages. GUI **500** also includes
20 a settings button **502**, which may be used to adjust various parameters for the e-mail program. Also illustrated in GUI **500** are e-mail entries **504-512**. In this example, e-mail entry **504** is a voice message while e-mail entries **506-512** are text messages.

25 In **Figure 5B**, send mail button **514** is replaced with a text button **518** and a voice button **520**. In this example, the space taken by send mail button **514** is split between available choices represented by text button **518** and voice button **520**. Text button **518** is selected if the
30 user desires to send a text e-mail message. Voice button

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520 is selected by the user if a voice message is desired. Selection of voice button **520** results in GUI **600** in **Figure 6** being displayed to the user. GUI **600** in **Figure 6** is optimized for creation of a voice message.

5 As can be seen, GUI **600** contains all of the controls necessary to address the message, record the message, and send the message. GUI **600** does not contain other superfluous controls, such as text formatting buttons and menus to create attachments as are found in other e-mail
10 systems. In this example, GUI **600** includes a "to" field **602** that is used to enter the recipient of the voice message. "CC" field **604** is used for carbon copies while "subject" field **606** is used to indicate a subject for the voice message. The voice message may be recorded by
15 selecting record button **608**. The recording may be stopped by pressing stop button **610**. The recorded message may be played back by pressing play button **612**. Text string field **614** illustrates the string that will be placed within the message to identify the message as a
20 voice mail message.

If the user is satisfied with the recorded message, selecting send button **616** will cause the message to be sent to the recipient identified in "to" field **602** and to any recipients identified in "CC" field **604**. If the user
25 decides not to send the message, the operation may be cancelled by selecting cancel button **618**.

In **Figure 7**, GUI **700** illustrates optimized views for customized content. Specifically, GUI **700** renders voice messages in a mail box or a list of new mail with a
30 particular icon to differentiate voice messages from text

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messages for the user. Entries **702-712** are e-mail messages received by the user. In this example, the e-mail message in entry **702** is a voice message while the e-mail messages in entries **704-712** are text messages.

- 5 The differentiation between voice and text is indicated graphically. Entry **702** is differentiated from entries **704-712** by icon **714** and icons **716-724**. Icon **714** indicates the presence of a voice message while icons **716-724** indicate the presence of a text message.
- 10 Messages also may be sent from GUI **700** by selecting send mail button **726** and settings may be adjusted by selecting settings button **728**.

- 15 Selection of entry **702** results in GUI **800** in **Figure 8** being displayed to the user. The user may playback the message by selecting play button **802** and may stop playback of the message by selecting stop button **804**. The sender of the voice message is found in "from" field **806** while the recipient of the voice message is identified in "to" field **808**. Other recipients of the
- 20 voice message may be identified in "CC" field **810**. The subject of the message may be placed in "subject" field **812**. The subject of the message is found in "subject" field **812**, which also identifies the length of the voice message. GUI **800** also may be used to reply to messages by
- 25 selecting reply button **814**. The voice message may be forwarded to another person by selecting forward button **816**. The voice message may be deleted by selecting delete note button **818**.

- 30 Turning next to **Figure 9**, a flowchart of a process for creating and sending custom voice messages is

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depicted in accordance with a preferred embodiment of the present invention. The processes illustrated in **Figure 9** may be implemented in GUI **400** and message processing unit **402** in **Figure 4**. Although this example illustrates the
5 creating and sending of custom voice messages, the processes illustrated in **Figure 9** may be applied to other types of custom messages, such as, for example, custom messages for commercial transactions, such as a stock trade.

10 The process begins by waiting for user input (step **900**). Upon receiving a user input to initiate an outgoing voice message (step **902**), the process will then create a custom window for creating voice messages (step **904**). Standard text for voice messages are appended or
15 inserted into a standard text e-mail message (step **906**). Thereafter, the process waits for user input (step **908**).

Upon receiving user input to input a recipient or recipients (step **910**), the recipient or recipients are stored (step **912**). These recipients are in the form of
20 e-mail addresses or selections from an address book in an e-mail system. Thereafter, the process returns to step **908** to await further user input.

When a subject user input is selected (step **914**) the subject for the e-mail message is stored (step **916**) with
25 the process then returning to step **908**. Upon receiving user input to input a message (step **918**), the process stores a voice recording in a file system (step **920**) with the process then returning to step **908** to await further user input. Upon receiving user input to send the voice
30 message (step **922**), a determination is made as to whether

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requirements have been satisfied (step **924**). These requirements are those needed to send the voice message. For example, at least one recipient is required before the message can be sent. Further, a voice recording also
5 must have been made and stored by the user. The subject matter of the message may be optional. If all of the requirements have not been satisfied, an error message is displayed to the user (step **926**). This error message may include an indication of unsatisfied requirements that
10 must be met to send the voice message. Thereafter, the process returns to step **908**.

If all of the requirements are met in step **924**, the custom message window is closed (step **928**). An outgoing message is created in the mail system (step **930**). Then,
15 the values for the recipient and the subject are sent to the mail system for placement in the outgoing message (step **932**). A standard text string identifying the voice message is appended to or placed within the body of the outgoing message (step **934**). The recorded voice file is
20 appended to the outgoing message as an attachment (step **936**). Thereafter, the message is sent (step **938**) with the process then returning to step **900** to wait for user input.

With reference again to step **908**, if the user input
25 is to cancel the message (step **940**) the custom message window is then closed (step **942**) with the process then returning to step **900**.

With reference again to step **900**, the process will accept other user input (step **944**), process the user
30 input (step **946**) and then return to step **900**. This other

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input may be for other types of customized messages or for a standard text message. Examples of other input that may occur in step 944 are creating a text message, opening a received message, and deleting a message. Upon
5 receiving a user input to end the system (step **948**), the process will then terminate.

With reference now to **Figure 10**, a flowchart of a process for receiving custom voice messages is depicted in accordance with a preferred embodiment of the present
10 invention. The process begins by checking for new messages (step **1000**). This step involves querying the mail server to determine whether new messages are present for the user. A determination is made as to whether new messages are present (step **1002**). If new messages are
15 not present, a timed delay will occur (step **1004**) with the process then returning to step **1000**. This timed delay may be set by the system or by the user to determine the amount of time that passes before a check for new messages is made.

20 If new messages are present, then a variable N is set equal to the number of new messages (step **1006**). An index is set equal to 1 (step **1008**). A determination is then made as to whether the index is less than or equal to N (step **1010**). If the index is not less than or equal
25 to N, the process proceeds to step **1004**. Otherwise, the next message is retrieved (step **1012**). This message is parsed to determine the message type (step **1014**). This step looks for a text string to identify whether customized content is present and the type of customized
30 content. A determination is then made as to whether a text string is present to indicate a voice message (step

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1016). If the message is not a voice message, the message is displayed in a message list in a normal fashion for text messages (step **1018**). On the other hand, if the message is a voice message, this message is
 5 displayed as a voice message in the message list (step **1020**). This display may include a selected icon to indicate that the message is a voice message. In either event after displaying the message in the message list, the index is incremented by 1, (step **1022**) with the
 10 process then returning to step **1010**.

With reference now to **Figure 11**, a flowchart of a process for displaying custom voice messages to a user is depicted in accordance with a preferred embodiment of the present invention. The process begins by waiting for
 15 user input (step **1100**). This steps waits for user input to occur on the message list displayed to the user.

If the user input is to open a voice message (step **1102**), a custom window for voice messages is displayed to the user (step **1104**). The process then waits for user
 20 input to the custom window (step **1106**). If the user input is to play audio (step **1108**), the file attached to the e-mail message is accessed (step **1110**). This file is the file containing the voice recording. The audio or voice recording is then presented to the user (step
 25 **1112**). The display is updated to reflect presentation of the voice recording (step **1114**). A determination is then made as to whether the playback has ended (step **1116**). If the playback has not ended, the process returns to step **1112** to continue playing the voice recording.
 30 Otherwise, the process returns to step **1106** as described

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above.

With reference again to step **1106**, if the user input is some other input (step **1118**) that input is processed (step **1120**) with the process then returning to step **1106**.

5 Examples of other input that may occur in step 1118 include replying, forwarding, and deleting the message. If the user input is a close message input (step **1122**), the custom window is closed (step **1124**) with the process then returning to step **1100**.

10 With reference again to step **1100**, if the input is other input (step **1126**) that input is processed (step **1128**) with the process then returning to step **1100**. This other input may be for example, opening a text message. If the user input is to end the system (step **1130**) the
15 process terminates.

Thus, the present invention provides a method, apparatus, and instructions for supporting different types of messages by providing customized GUIs for each particular type of message. The processes of the present
20 invention are compatible with existing e-mail systems through the use of a standard text string to identify customized content. An enabled mail system will examine the message to see if a text string is present that identifies customized content and will process the
25 message accordingly if such a text string is present. An e-mail system without the processes of the present invention will still be able to present the message to the user and allow the user to manipulate attachments through presently available mechanisms.

30 It is important to note that while the present invention has been described in the context of a fully

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functioning data processing system, those of ordinary skill in the art will appreciate that the processes of the present invention are capable of being distributed in the form of a computer readable medium of instructions and a variety of forms and that the present invention applies equally regardless of the particular type of signal bearing media actually used to carry out the distribution. Examples of computer readable media include recordable-type media such a floppy disc, a hard disk drive, a RAM, and CD-ROMs and transmission-type media such as digital and analog communications links.

The description of the present invention has been presented for purposes of illustration and description, but is not intended to be exhaustive or limited to the invention in the form disclosed. Many modifications and variations will be apparent to those of ordinary skill in the art. For example, although the depicted example is directed towards voice messages as a type of content, the present invention may be applied to other types of content. For example, a stock trade may be a particular type of message. With a stock trade message, the GUI would provide customized controls and inputs used to facilitate trading of stocks. Further, authentication information and authorization information in the form of certificates and/or keys may be attached as a file to the e-mail message. The embodiment was chosen and described in order to best explain the principles of the invention, the practical application, and to enable others of ordinary skill in the art to understand the invention for various embodiments with various modifications as are suited to the particular use contemplated.

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CLAIMS:

What is claimed is:

1. A method in a data processing system for processing
5 voice messages, the method comprising the data processing
system implemented steps of:
recording a voice message;
responsive to recording of the voice message,
automatically inserting an indicator into a text message
10 indicating a presence of a voice message;
responsive to recording the voice message,
automatically appending the voice message to the text
message to form an appended voice message; and
15 sending the text message with the appended voice
message.
2. The method of claim 1 further comprising:
receiving the text message to form a received text
message;
20 parsing the received text message for a presence of
an indicator indicating that the received text message is
a voice message; and
responsive to a presence of the indicator,
presenting controls to listen to the voice message.
25
3. The method of claim 1, wherein the received text
message is an electronic mail message.
4. The method of claim 1, wherein the indicator is a
30 text string.

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5. The method of claim 1, wherein the data processing system is a personal computer.

6. The method of claim 1, wherein the data processing system is a work station.

7. The method of claim 1, wherein the data processing system is a personal digital assistant.

10 8. A method in a data processing system for sending voice messages, the data processing system comprising the computer implemented steps of:

creating a voice message;

responsive to creating the voice message,

15 automatically inserting an identifying string into a text message identifying a presence of the voice message;

responsive to creating the voice message,

automatically appending the voice message to the text message.

20

9. The method of claim 8, wherein the text message is an electronic mail message.

10. A method in a computer for receiving a voice message, the method comprising:

receiving a text message;

parsing the text message for an identifying string identifying a presence of a voice message associated with the text message; and

30 responsive to the presence of the identifying string, displaying the text message as a voice message in

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a message list.

11. The method of claim 10 further comprising:
 responsive to a presence of the identifying string,
 5 displaying controls for presenting the voice message.

12. The method of claim 10, wherein the text message is
 an electronic mail message.

10 13. The method of claim 11, wherein the controls include
 a play control, a rewind control, and a fast forward
 control.

14. A messaging system for use in a data processing
 15 system, the messaging system comprising:
 a graphical user interface, wherein the graphical
 user interface provides selections for user input to
 create and send voice messages; and
 a message processing mechanism, wherein the message
 20 processing mechanism has a plurality of modes of
 operation including:

a first mode of operation in which the message
 processing mechanism waits for a user input;

25 a second mode of operation, responsive to a
 user input in the first mode of operation to record
 a voice message, in which the message processing
 mechanism stores voice data in a file;

30 a third mode of operation, responsive to a user
 input in the first mode of operation to select a
 recipient for the voice message, the message
 processing mechanism receives a selection of a

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recipient for the voice message; and

5 a fourth mode of operation, responsive to a user input in the first mode of operation to send the voice message and to a presence of a recipient for the voice message, in which the message processing mechanism creates a text message, inserts a identifying string, identifying a presence of the voice message in the text message, appends the file to the text message, and sends the text message to
10 the recipient.

15. The messaging system of claim 14, wherein the message processing mechanism further includes:

15 a fifth mode of operation in which the message processing mechanism waits for a receipt of a text message;

20 a sixth mode of operation, responsive to receiving a text message, in which the message processing mechanism parses the text message to determine whether an identifying string identifying a presence of a voice message is present; and

25 a seventh mode of operation, responsive to a presence of the identifying string, in which the message processing mechanism causes the graphical user interface to display the message as a voice message in a message list.

16. A data processing system for processing voice messages, the data processing system comprising:

30 recording means for recording a voice message; inserting means, responsive to recording of the

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voice message, for automatically inserting an indicator into a text message indicating a presence of a voice message;

- 5 appending means, responsive to recording the voice message, for automatically appending the voice message to the text message to form an appended voice message; and
- sending means for sending the text message with the appended voice message.

- 10 17. The data processing system of claim 16 further comprising:

 receiving means for receiving the text message to form a received text message;

- 15 parsing means for parsing the received text message for a presence of an indicator indicating that the received text message is a voice message; and

 presenting means, responsive to a presence of the indicator, for presenting controls to listen to the voice message.

- 20 18. The data processing system of claim 16, wherein the received text message is an electronic mail message.

- 25 19. The data processing system of claim 16, wherein the indicator is a text string.

20. The data processing system of claim 16, wherein the data processing system is a personal computer.

- 30 21. The data processing system of claim 16, wherein the data processing system is a work station.

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22. The data processing system of claim 16, wherein the data processing system is a personal digital assistant.

5 23. A data processing system for sending voice messages, the data processing system comprising:

creating means for creating a voice message;

inserting means, responsive to creating the voice message, for automatically inserting an identifying
10 string into a text message identifying a presence of the voice message;

appending means, responsive to creating the voice message, for automatically appending the voice message to the text message.

15

24. The data processing system of claim 23, wherein the text message is an electronic mail message.

25. A data processing system for receiving a voice
20 message, the data processing system comprising:

receiving means for receiving a text message;

parsing means for parsing the text message for an identifying string identifying a presence of a voice message associated with the text message; and

25 displaying means, responsive to the presence of the identifying string, for displaying the text message as a voice message in a message list.

26. The data processing system of claim 25 further
30 comprising:

displaying means, responsive to a presence of the

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identifying string, for displaying controls for presenting the voice message.

27. The data processing system of claim 25, wherein the
5 text message is an electronic mail message.

28. The data processing system of claim 26, wherein the controls include a play control, a rewind control, and a fast forward control.

10

29. A computer program product in a computer readable medium for processing voice messages, the computer program product comprising:

15 first instructions recording a voice message;
second instructions, responsive to recording of the voice message, for automatically inserting an indicator into a text message indicating a presence of a voice message;

20 third instructions, responsive to recording the voice message, for automatically appending the voice message to the text message to form an appended voice message; and

fourth instructions for sending the text message with the appended voice message.

25

30. The computer program product of claim 29 further comprising:

fifth instructions for receiving the text message to form a received text message;

30 sixth instructions for parsing the received text message for a presence of an indicator indicating that

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the received text message is a voice message; and

seventh instructions, responsive to a presence of the indicator, for presenting controls to listen to the voice message.

5

31. A computer program product in a computer readable medium for sending voice messages, the computer program product comprising:

first instructions for creating a voice message;

10 second instructions, responsive to creating the voice message, for automatically inserting an identifying string into a text message identifying a presence of the voice message;

15 third instructions, responsive to creating a voice message, for automatically appending the voice message to the text message.

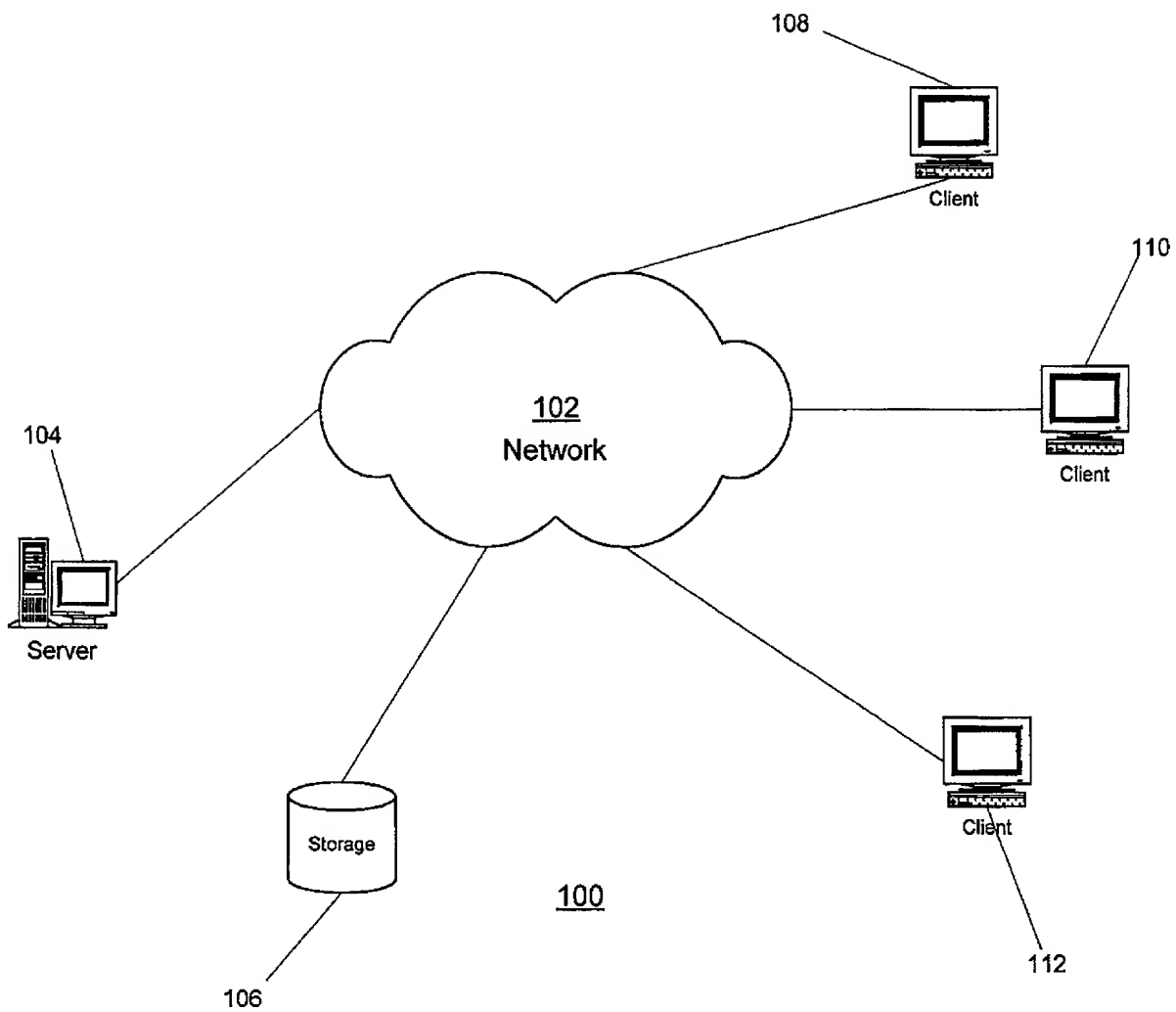
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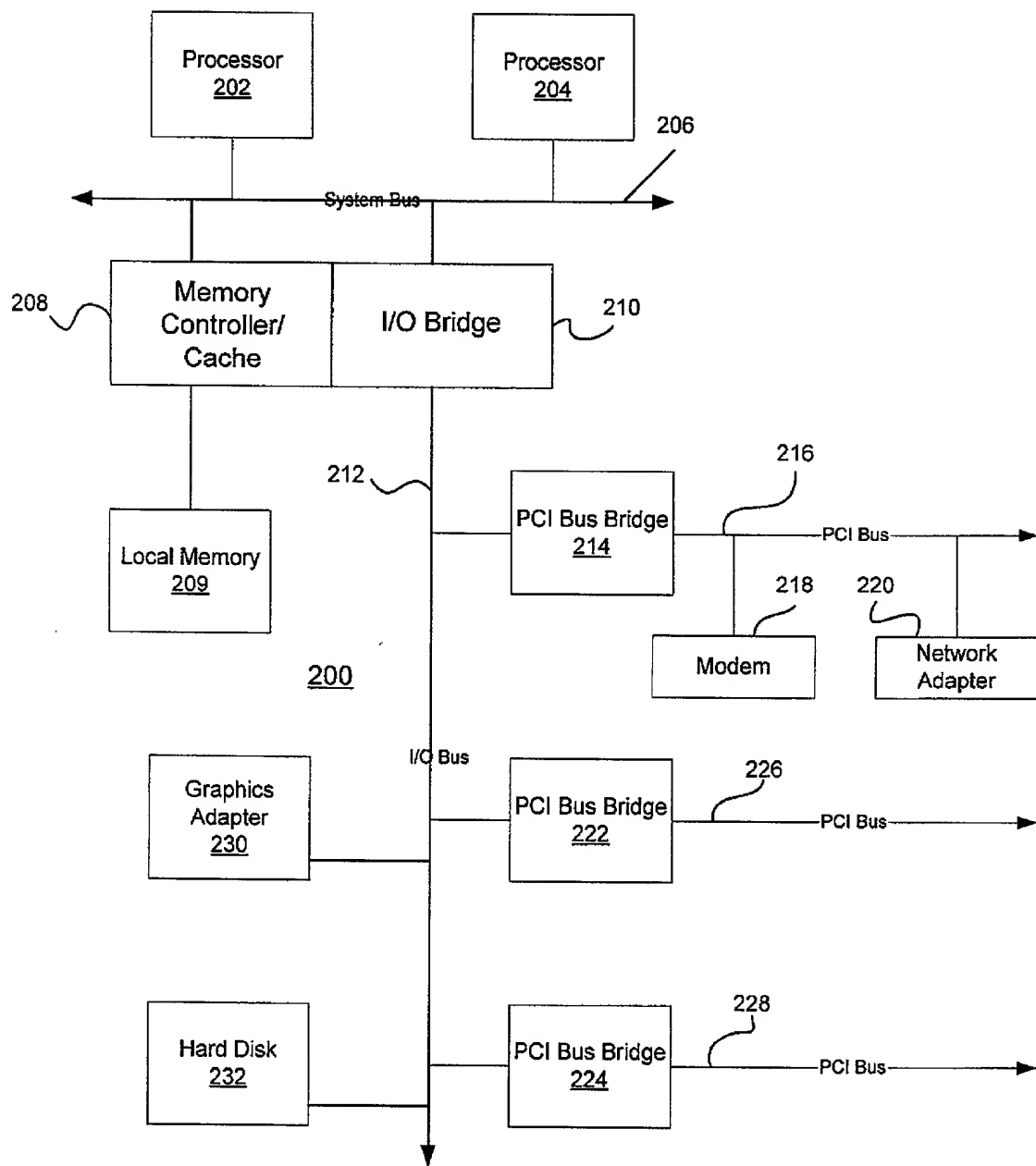
ABSTRACT OF THE DISCLOSURE

5 **A METHOD AND APPARATUS FOR SENDING MESSAGES IN A DATA
PROCESSING SYSTEM**

10 A method and apparatus in a computer for processing
voice messages. A voice message is recorded. Responsive
to recording of the voice message, an identifying string
is automatically inserted into a text message identifying
a presence of a voice message. Responsive to recording
the voice message, the voice message is automatically
15 appended to a text message to form an appended voice
message. The text message is sent with the appended voice
message. When a message is received, the text in the
received message is parsed to see if an identifying
string is present indicating that the received message is
a voice message. Responsive to a determination that the
20 received message is a voice message, a graphical user
interface including controls for presenting the voice
message is displayed.

Figure 1





server

Figure 2

Client

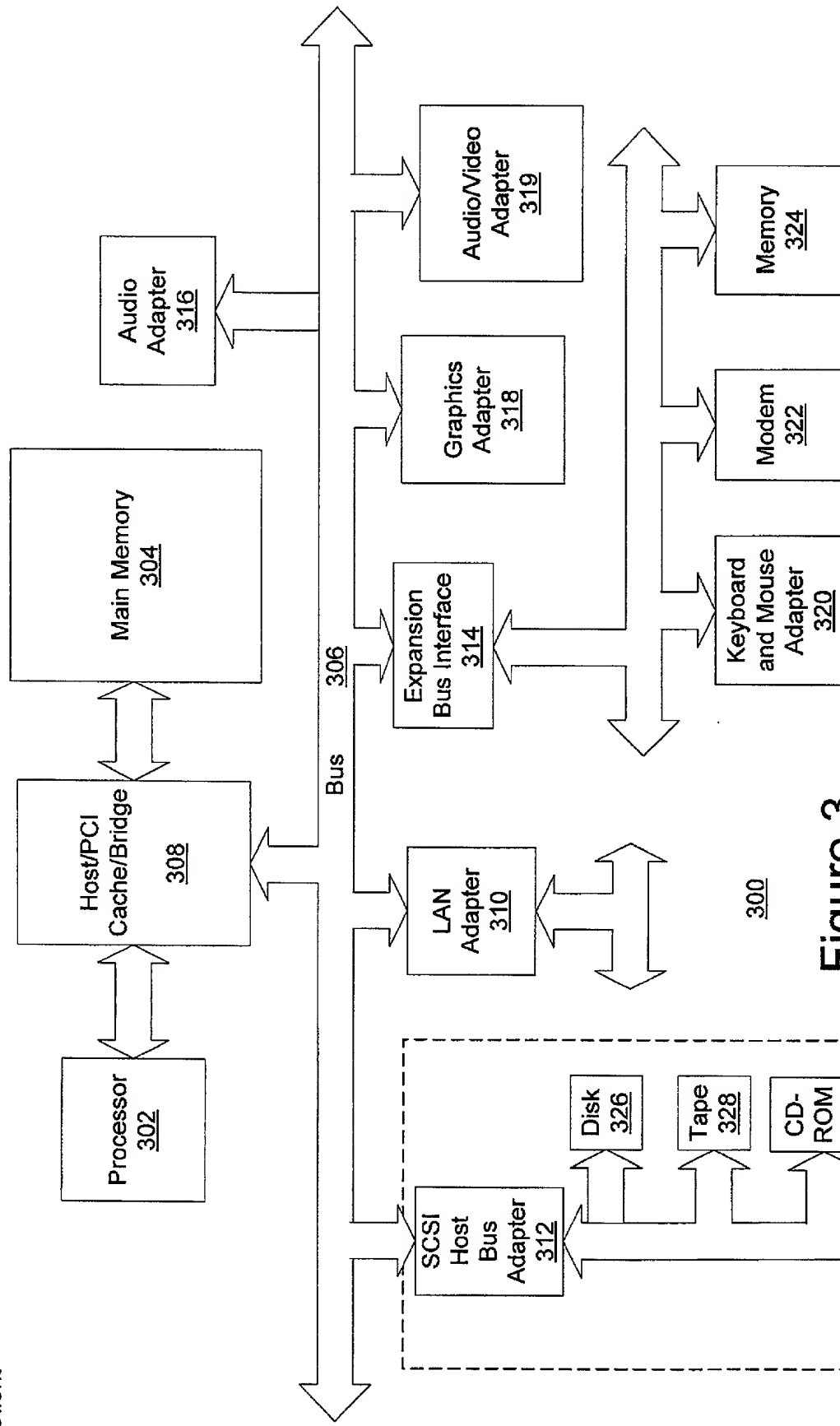


Figure 3

332

Figure 4
0274

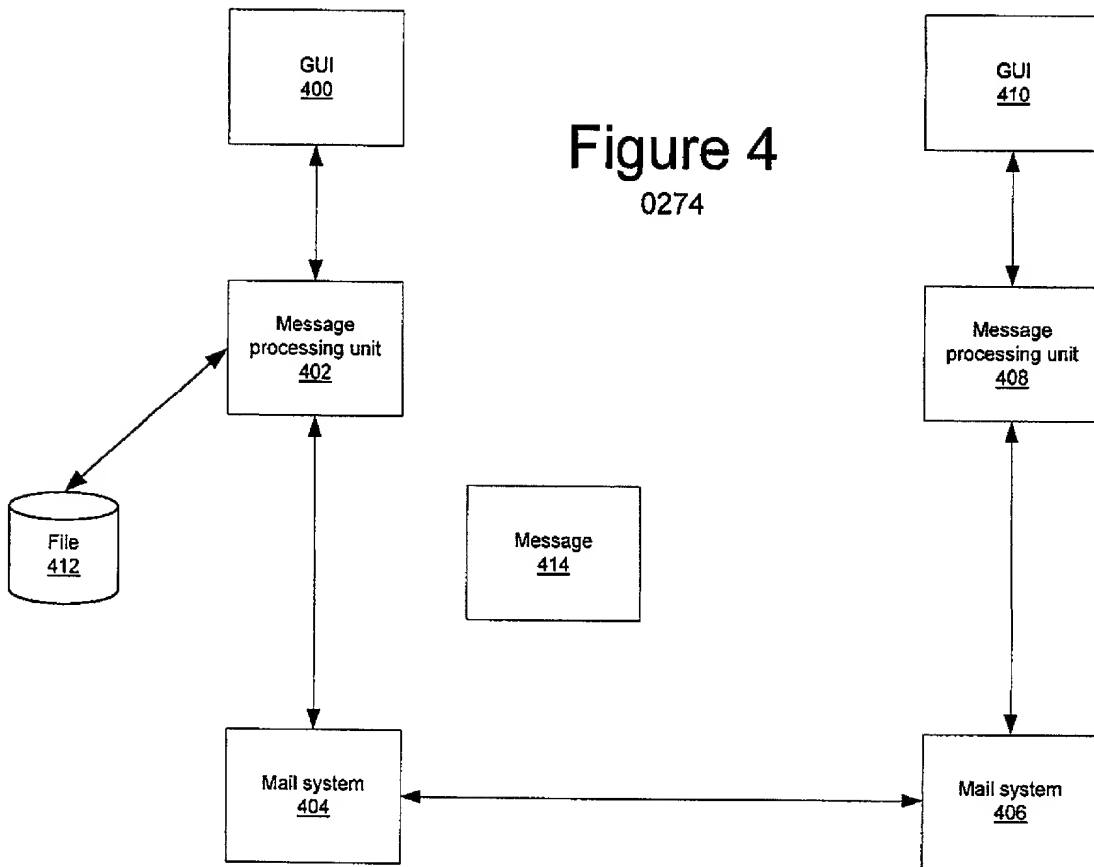


Figure 5A

0274

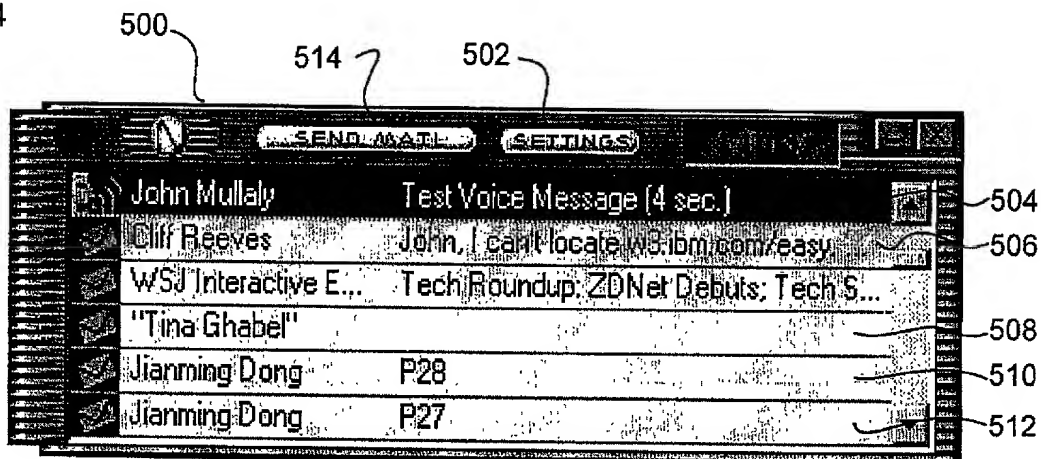


Figure 5B

0274

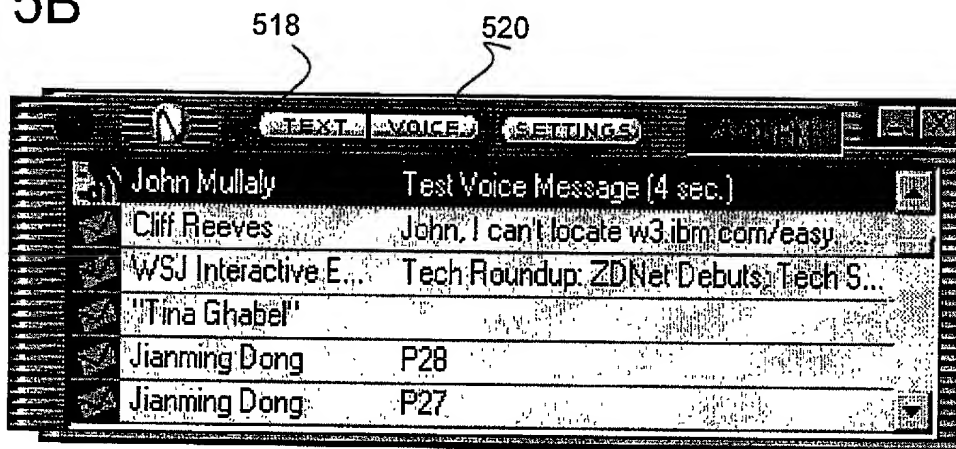


Figure 6

0274

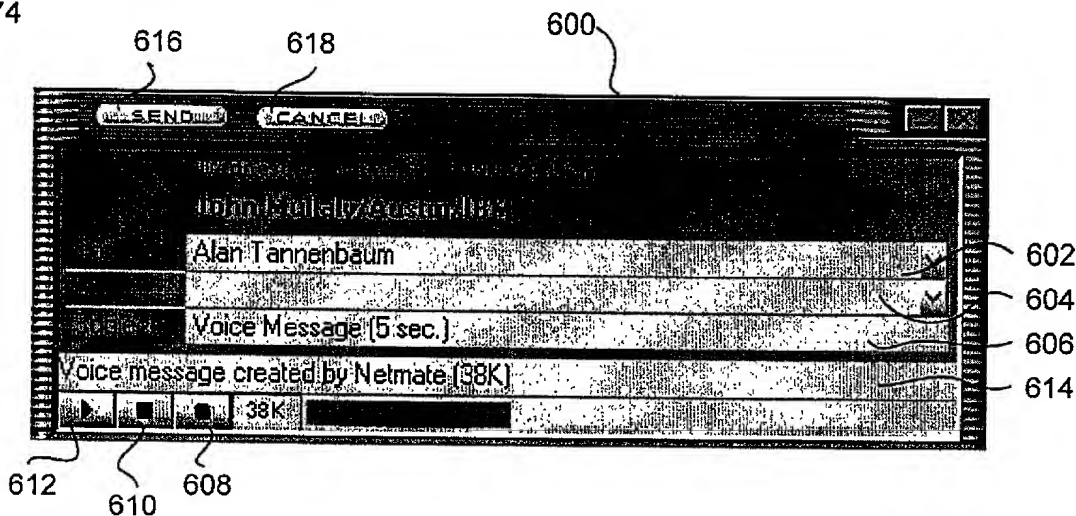


Figure 7

0274

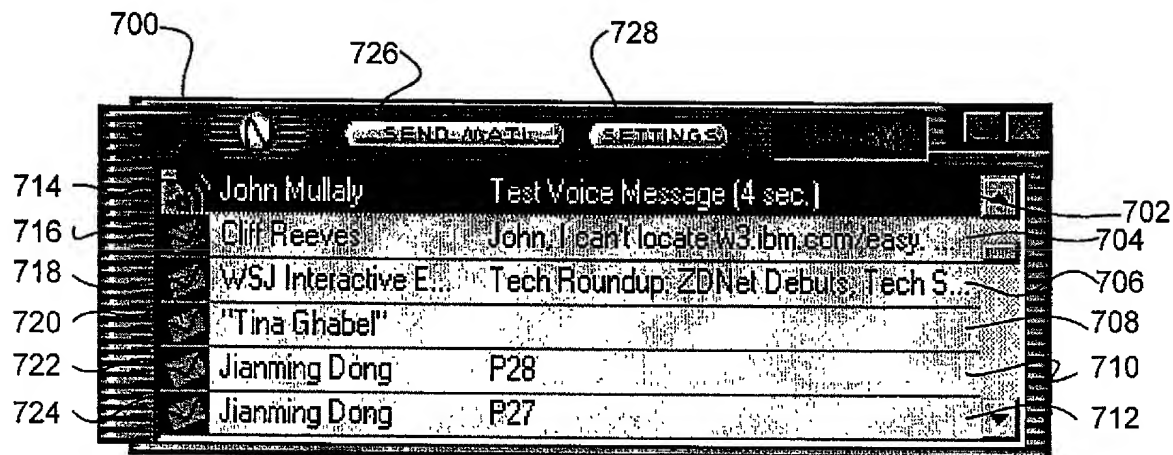
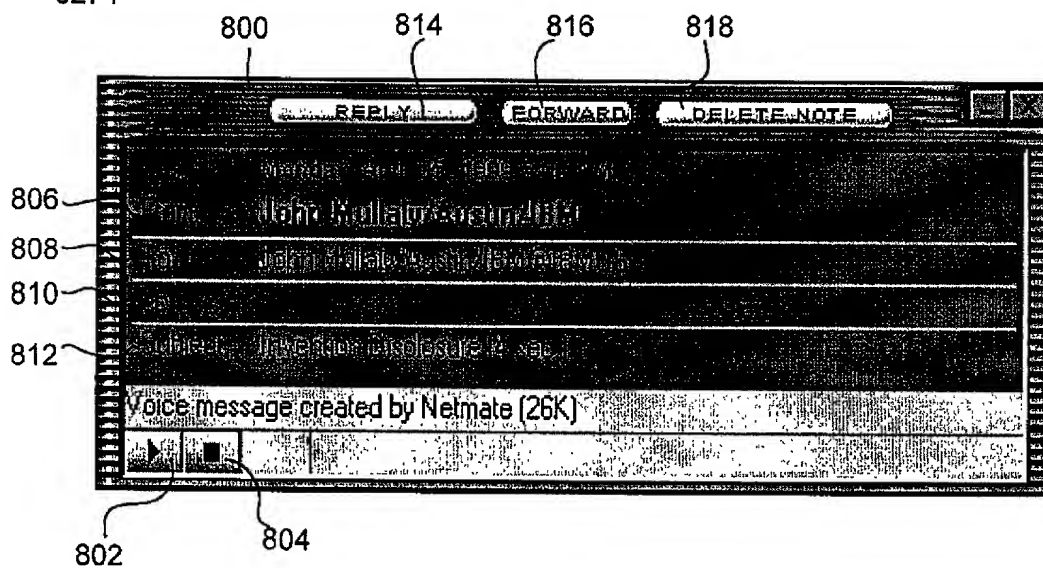


Figure 8

0274



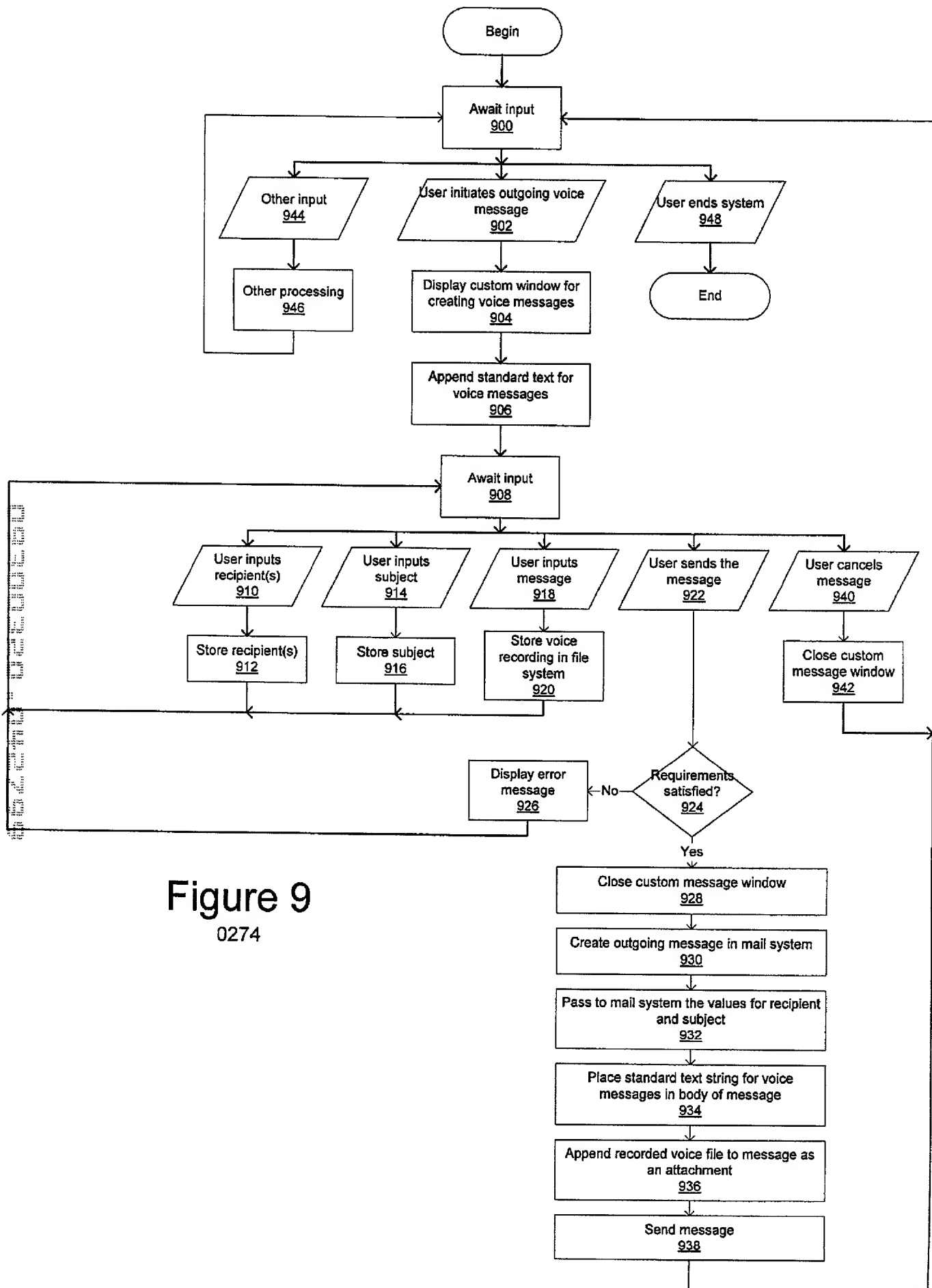
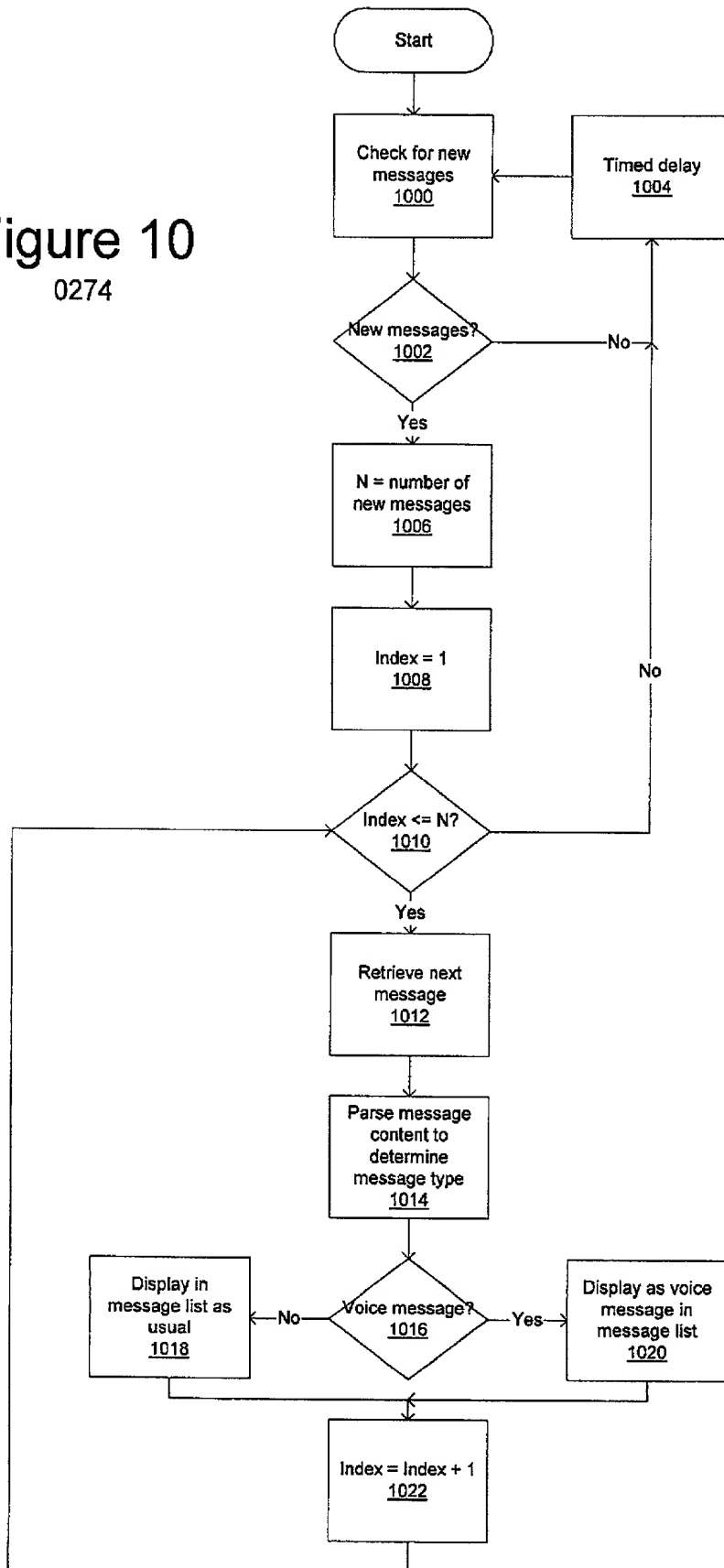


Figure 9

0274

Figure 10
0274



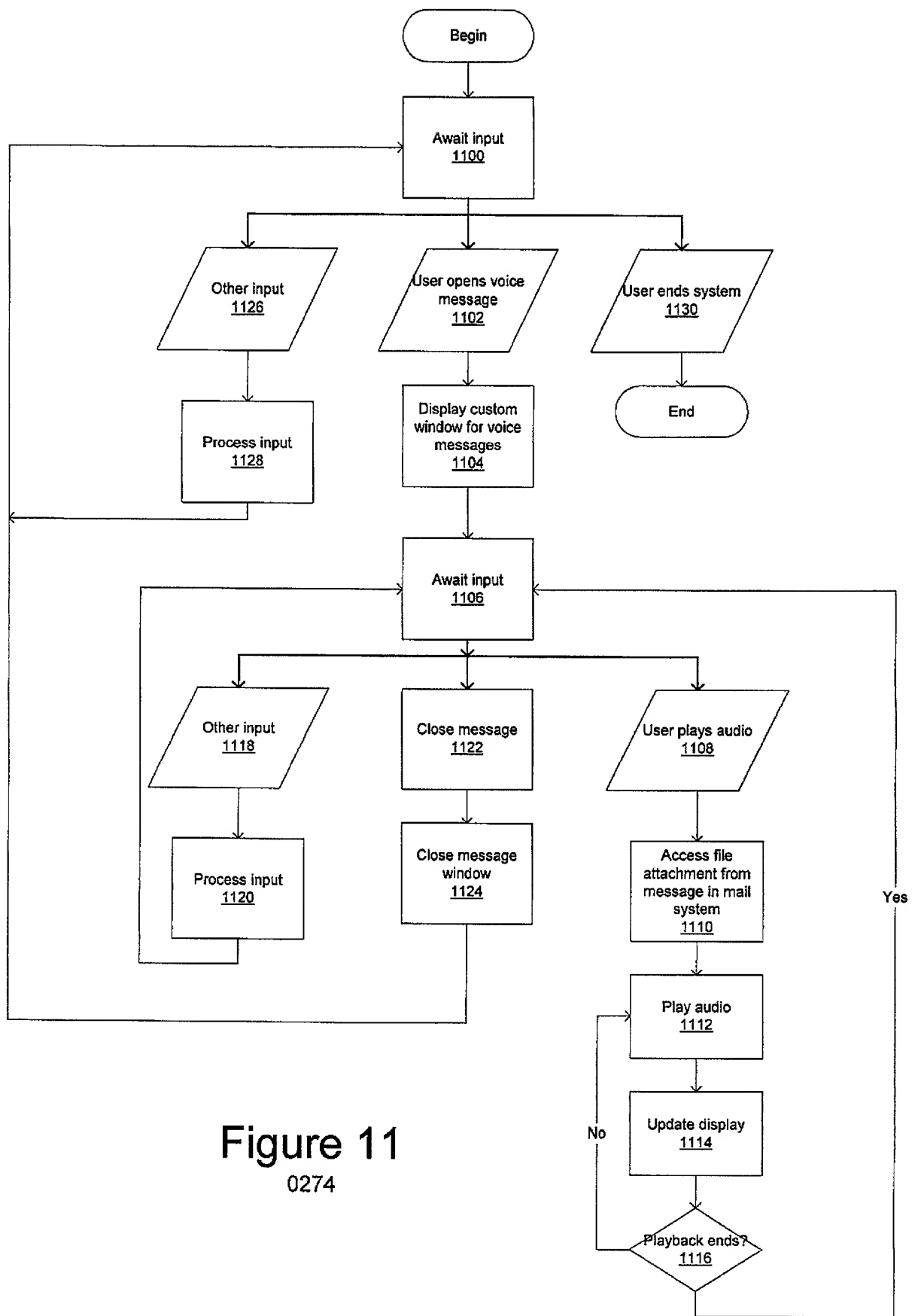


Figure 11
0274

**DECLARATION AND POWER OF ATTORNEY FOR
PATENT APPLICATION**

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name;

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled

A METHOD AND APPARATUS FOR SENDING MESSAGES IN A DATA PROCESSING SYSTEM

the specification of which (check one)

X is attached hereto.

— was filed on _____
as Application Serial No. _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with Title 37, Code of Federal Regulations, § 1.56.

I hereby claim foreign priority benefits under Title 35, United States Code, '119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s):

Priority Claimed

(Number) (Country) (Day/Month/Year) Yes No

I hereby claim the benefit under Title 35, United States Code, § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose information material to the patentability of this application as defined in Title 37, Code of Federal Regulations, § 1.56 which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial #)	(Filing Date)	(Status)
------------------------	---------------	----------

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorneys and/or agents to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

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